WORLD PT DAY 2026

PAEDIATRIC PHYSIOTHERAPY EVIDENCE SERIES

Cardiovascular Conditions and Risk in Children & Adolescents

A World PT Day 2026 companion resource, covering heart conditions present from birth or acquired in childhood, and heart/lung strain that can develop secondary to spinal or chest-wall deformity.

World PT Day 2026 theme: cardiovascular disease & stroke · 8 September · For clinicians, families, children & adolescents

Cardiovascular Conditions & Risk Factors in Children

Cardiovascular risk in children looks different than in adults. Most conditions are present from birth, are acquired through a small number of specific childhood illnesses, or develop as a spinal or chest-wall deformity that can affect normal lung and heart function. The table below summarises the conditions and risk factors physiotherapists most often encounter in paediatric practice.

Condition / risk factor	What it is	Why it matters
Congenital heart disease (CHD)	A structural heart problem present from birth—e.g., patent ductus arteriosus, ventricular septal defect.	The most common type of birth defect, affecting 1.4–2.3% of all children born globally. Among children with CHD, 30–50% are diagnosed with a neurodevelopmental and/or mental health condition.[1]
Kawasaki disease	An acute febrile illness, primarily affecting children <5 years old, that causes inflammation of the blood vessels.[2]	The leading cause of acquired heart disease in children in developed countries. Without treatment, about 25% develop coronary artery dilation or aneurysms; early diagnosis and treatment reduce this risk.[2]
Rheumatic heart disease	Heart valve damage caused by rheumatic fever, an autoimmune reaction to inadequately treated streptococcal pharyngitis.	A major cause of acquired childhood heart disease worldwide; an estimated 6.2 million children were living with this condition in 2021, primarily in low- or middle-income countries.[3]
Scoliosis linked to a neuromuscular condition (e.g. cerebral palsy, muscular dystrophy)	A progressive sideways curve of the spine linked to underlying muscle weakness.	Severe scoliosis may cause additional motor dysfunction, compromised pulmonary function and pain with reduced quality of life. Higher GFMCS level and increasing age are risk factors for the development of scoliosis in children and adolescents with cerebral palsy.[4]
Chest wall deformity (e.g. funnel chest or pigeon chest)	An inward or outward curve of the sternum and ribs.	Can alter the position and mechanical function of the heart and lungs and may reduce cardiopulmonary performance, particularly during growth; effects vary with

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		severity and are often improved by appropriate correction.[5]
Physical inactivity, overweight & obesity	Globally, about 81.0% of adolescents do not meet recommended physical activity guidelines;[6] about 20% of children and adolescents aged 5–19 years living with overweight and obesity.[7]	Physical activity is a key modifiable pathway for cardiovascular and metabolic health and for reducing risk of atherosclerosis, hypertension, diabetes and stroke later in life.[8]

How physiotherapy helps

Prevention, early recognition, assessment & action

- Building activity habits and confidence early — through play, movement, sport and family routines — supports lifelong heart health and is included within physiotherapy's broader public-health role.
- For a child with a known heart condition, physiotherapists assess functional capacity and exercise tolerance and work with the medical team to prescribe an appropriate activity level, rather than defaulting to unnecessary rest.
- For spinal and chest-wall conditions, regular monitoring of posture, mobility, and cardiorespiratory function can support timely identification, referral and management before problems become severe enough to affect cardiopulmonary function.
- Family education on warning signs supports earlier recognition of problems and timely referral and intervention.

Management & rehabilitation

- After heart surgery, a serious illness such as Kawasaki disease, or as part of ongoing care for a congenital heart condition, physiotherapists guide children through a structured, supervised return to activity, progressing gradually over weeks, including breathing exercises in the early stages. [2,9]
- For children whose spine or chest shape is affecting their cardiorespiratory function, physiotherapy includes breathing and chest-expansion exercises, support with clearing chest secretions, and positioning advice, in close teamwork with the child's cardiac, pulmonary and orthopaedic specialists.
- Around any related surgery — heart, spine or chest-wall — physiotherapists help assess and prepare the child and the family beforehand and support functional recovery afterward.
- Typical programmes should begin with an individual assessment and an exercise prescription combining regular moderate aerobic activity (for example brisk walking, swimming, cycling or age-appropriate non-contact games) with simple, playful strength-building activity when appropriate. Frequency, intensity, duration and progression should be individualised to the child's diagnosis, clinical status and exercise tolerance; heart-rate, oxygen-uptake or perceived-exertion measures may be used when clinically appropriate. [9]

- Family-friendly formats, including home-based programmes with regular remote check-ins, can make it easier for families to maintain activity and self-management long-term.

> Note: children with a pacemaker or implanted device, or taking blood-thinning medication, need individual activity guidance from their heart team before contact or high-impact activity.

What families & clinicians should observe or take note of

> **Watch for:** shortness of breath, irritability, unusual tiredness, poor weight gain, chest pain or fainting during play, or a bluish tinge to the lips or nails during exertion — these should be flagged promptly to the child's care team.

Note: This evidence-based document was prepared with the assistance of generative AI tools and fully reviewed, verified, and revised manually by a panel of paediatric physiotherapists with content expertise.

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